

# The benefits of knitting for personal and social wellbeing in adulthood: findings from an international survey

Jill Riley,<sup>1</sup> Betsan Corkhill<sup>2</sup> and Clare Morris<sup>3</sup>



## Key words:

Occupation, mood, cognitive ability, skill.

**Introduction:** There is increasing evidence that engaging in creative and meaningful occupation can impact positively on health and wellbeing. Much of the research in this area has concentrated on general occupational categories and less is known about the benefits of specific occupations. This study aimed to identify the benefits of knitting for individuals' personal and social wellbeing as a prerequisite to investigating its therapeutic use.

**Method:** An online survey was conducted through an internet knitting site. Responses were received from 3,545 knitters worldwide. Quantitative data were analysed statistically to establish relationships and differences among variables and qualitative data for key themes.

**Results:** Respondents came from a virtual community of knitters. The majority were female white adults and frequent knitters, who commonly reported knitting for relaxation, stress relief and creativity. The results show a significant relationship between knitting frequency and feeling calm and happy. More frequent knitters also reported higher cognitive functioning. Knitting in a group impacted significantly on perceived happiness, improved social contact and communication with others.

**Conclusion:** Knitting has significant psychological and social benefits, which can contribute to wellbeing and quality of life. As a skilled and creative occupation, it has therapeutic potential – an area requiring further research.

<sup>1</sup>Lecturer in Occupational Therapy, School of Healthcare Studies, Cardiff University, Cardiff.

<sup>2</sup>Director, Stitchlinks UK, Bath.

<sup>3</sup>Professor of Professional Practice, University of Gloucestershire, Longlevens, Gloucester.

## Corresponding author:

Dr Jill Riley, Lecturer in Occupational Therapy, School of Healthcare Studies, Cardiff University, Cardigan House, Heath Park, Cardiff CF14 4XN. Email: RileyJM@Cardiff.ac.uk

**Reference:** Riley J, Corkhill B, Morris C (2013) The benefits of knitting for personal and social wellbeing in adulthood: findings from an international survey. *British Journal of Occupational Therapy*, 76(2), 50-57.

DOI: 10.4276/030802213X13603244419077

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Submitted: 19 January 2012.

Accepted: 15 June 2012.

## Introduction

The relationship between occupation as purposeful, meaningful and goal-directed doing and health and wellbeing is well established in the occupational science and occupational therapy literature (Wilcock 2006, Hocking 2009). However, much of the research in this area has concentrated on general categories of occupation, such as leisure (for example, Ball et al 2007, Lloyd et al 2007) or work (for example, Jakobsen 2004, Håkansson and Ahlborg 2010), rather than exploring the nature and benefits of specific occupations (Hocking 2009). This article concentrates on one occupation, knitting, a skilled and creative yet largely taken-for-granted domestic pursuit, which has recently enjoyed a resurgence, 'a new visibility' and social acceptability (Turney 2009, p144).

Although there is increasing evidence that engaging in creative activities can impact positively on both health and wellbeing (Department of Health and Arts Council for England 2007), much of this comes from visual and performing arts (Staricoff 2004). Less is known about the benefits of specific and readily available domestic arts and crafts, such as knitting.

## Literature review

### The nature of knitting as occupation

As a creative, inexpensive and portable activity, knitting combines repetitive tasks and physical and cognitive skills with the enjoyment of creating a product

(Hosegood 2009). The term 'knitting' describes a construction process, which results in 'a looped fabric made from a continuous supply of yarn, by hand with needles or by machine' (Harris 2004, p46). Its apparent simplicity has ensured its survival as a domestic, as well as a commercial, textile craft (Gillow and Sentance 1999). Basic hand knitting is relatively simple to learn and its tacit skills have been passed down through generations (Turney 2009). Knitting can be learnt by children and engaged in across the lifespan; it can become exceptionally complex and mastering the art of knitting 'can take a life time' (Stanley 2002, p24). As an art and skilled craft, knitting can offer a means for expressing personal ability, creativity and cultural traditions. It can also be a vehicle for making social connections through knitting groups and, today, the development of virtual knitting communities (Minahan and Wolfram Cox 2007, Turney 2009).

Although there is limited research evidence to support a relationship between knitting and wellbeing, Turney (2009) discussed knitting's potential to promote wellbeing through repetitive activity, which can create 'a space for contemplation' and induce 'an enhanced state of calm' (p152). Similarly, Katz-Friberg (2010) pointed to knitting's meditative and therapeutic qualities. Albert Einstein was reputed to have knitted between projects to 'calm his mind and clear his thinking' and textile designer and knitter Kaffe Fassett described it as 'the most therapeutic thing in the world' (Lawley 2004, p169). To date, the therapeutic qualities of creative arts and crafts occupations and their relationship with wellbeing have been researched in general terms, rather than by concentrating on specific occupations.

## The relationship between creative arts, crafts and wellbeing

Recent reviews of the research-based literature indicate that therapeutic engagement in creative arts and crafts can have a positive impact on mental health and wellbeing (Perruzza and Kinsella 2010). From a psychological perspective, Huppert (2009) described wellbeing as a 'combination of feeling good and functioning effectively' (p137). It encompasses an ability to realise one's own potential, cope with normal daily stresses and contribute productively to society (World Health Organization 2009). Engagement in the creative arts and crafts can influence wellbeing positively by promoting motivation and self-esteem (Bedding and Sadlo 2008), a sense of self and positive identity (Riley 2008, Reynolds 2009), quality of life and personal growth (Hacking et al 2006). A phenomenological study exploring the meanings of making traditional arts and crafts (Tzanidaki and Reynolds 2011) revealed a sense of competence and achievement that comes from craft making and a sense of continuity of self in later life among older women in Crete. Indeed, Blanche (2007) described creative occupations as 'one of the purest ways for a person to express their authentic self' (p29). From their review of the literature, Perruzza and Kinsella (2010) found that engaging in creative arts occupations also enhanced participants' perceived sense of control and choice, offering a form of self-expression, a sense of purpose and a means of

coming to terms with illness. The relationship between engaging in the creative arts and crafts occupations and wellbeing is, in general terms, clear. However, there are relatively few studies that explore textile-related arts and crafts (of which knitting is one) as occupation.

## Textile arts and crafts as occupation

Textile arts and crafts cover a broad range of specific techniques and practices that, through hands-on engagement with equipment and materials, result in the production and/or embellishment of fabric (Riley 2011). Textile art making as occupation and its subjective meanings for women with chronic illnesses have been researched extensively by Reynolds (2006) and Reynolds and Prior (2003). In addition, Dickie's (2004) ethnographic study of American quilters offered insights into quilting as a skilled and creative occupation in a sociocultural context and Howell and Pierce (2000) discussed the restorative value of quilt making. A study by Boerema et al (2010) showed the positive contribution of sewing to a sense of self and personal wellbeing for immigrant women in South Australia, providing them with a link to their cultural traditions. An ethnographic study by Riley (2008) explored the potential of weaving, spinning and dyeing to promote personal and social wellbeing, uncovering the sense of self and collective sense of self that comes from engaging in textile making and creating textiles individually or with others. Although this body of work refers to a range of textile-related occupations, each incorporating different skills and techniques, as a whole it demonstrates how engagement in purposeful, skilled and creative textile making, alone or with others, is meaningful to participants, contributing to their quality of life and sense of wellbeing. The study described here seeks to contribute to this evidence base through exploring the impact of knitting on individuals' perceptions of their mental and social wellbeing by:

1. Identifying how and why individuals engage in knitting
2. Establishing knitters' perceptions of how knitting:
  - Affects mood, feelings and thinking
  - Promotes social activity
  - Impacts on individuals' skill development.

## Method

### Study design

In order to address the study's aims with a wide population of knitters, an online survey was conducted in 2010 with knitters who accessed a specific internet website. Compared with other more traditional methods, online surveys have the advantage of providing access to a potentially wide target audience (Gaiser and Schreiner 2009). The virtual community of knitters in this study shares project ideas, experiences and information online. It is also a forum for social networking and has an estimated membership of over one million people worldwide of different sexes, ages, nationalities, ethnicity, socioeconomic groups and people with and without disabilities and medical conditions.

Ethics

Ethical approval was given by the university’s ethics committee and formal permission to conduct the survey was secured from the host website organisers. Information about the study and assurances of confidentiality and anonymity were posted on the internet site, together with an invitation to take part and a link to the questionnaire.

Sample

The nature of the design meant that the sample was self-selecting, limited to those who chose to respond to the invitation posted on the internet site. Internet surveys have the advantage of being able to collect large amounts of data at relatively little cost, so in order to maximise heterogeneity (Dillman 2007) and allow for incomplete responses, the maximum number was set at 5000. The link to the questionnaire was kept live for 2 weeks.

Survey instrument

The questionnaire was designed using Bristol Online Surveys (BOS) software (BOS 2012). It was divided into six sections in order to gather data on demographics, reasons for engaging in knitting, and perceived effects on mood and feelings, thinking, social activity and skills. Questions were based on themes extracted from narrative data collected by Stitchlinks UK (Stitchlinks 2010) and designed to yield a mix of nominal, ordinal and qualitative data (Fowler 2002). They included tick boxes for personal details such as gender, age and ethnicity; categorical 5, 7 or 10 point scales where respondents were asked to rate their mood or feelings; and open free-text boxes where respondents could add additional information or, for example, detail their main reasons for knitting or outline their skills.

To improve reliability and validity, the questionnaire was piloted with a local group of knitters (n = 40) and amendments were made to improve clarity and design. A revised version was launched on the host internet site in June 2010.

Response

An actual response rate is impossible to calculate for online surveys because the number of people who saw the survey but chose not to complete it cannot be established. Responses were received from 3,545 knitters (of which 3514 were valid) within 2 weeks, with no reminders or prompts (70% of the maximum number set).

Data analysis

Data were initially organised and managed using the BOS analysis system. Quantitative data were transported into SPSS 16 for descriptive statistics and to test relationships and differences among variables. Qualitative data were coded in NVivo 8 to establish categories and themes.

Results

The results bring together the quantitative and qualitative findings from each section of the questionnaire.

Demographics

Of the respondents, 98.8% were female and 1.2% male and the majority (90%) classified themselves as ‘white’. Overall, 31 countries were represented from North and South America, Europe, Asia, Australia and Africa. The majority of respondents (59%) lived in North America (United States and Canada) and 31% in the United Kingdom. Age distributions tended to be skewed towards the younger age groups, that is, under 40 years, with the tendency being more pronounced for males. The modal age group was 21-30 years (see Table 1). The results given below apply to female respondents. The number of responses from males (n = 42) was considered too small for comparative analysis, but will form a basis for further study.

Table 1. Age distributions

Age group (years)	Male	Female
Under 20	5 (11.9%)	79 (2.3%)
21-30	14 (33.3%)	978 (28.3%)
31-40	13 (31.0%)	946 (27.4%)
41-50	5 (11.9%)	650 (18.8%)
51-60	3 (7.1%)	515 (14.9%)
60+	2 (4.8%)	290 (8.4%)
Total	42	3458

Where people knit

The majority of respondents (98%) said that they knitted at home; knitting in public (for example, on public transport or in cafés) was more prevalent among the under 40 years age groups.

Medical conditions

Of the respondents, 33% reported having a medical condition. These included a range of psychological, physical and neurological problems, most commonly anxiety, depression, arthritis, fibromyalgia and hypertension.

Reasons for knitting

Respondents were asked to identify their main reasons for knitting. From the qualitative free-text responses to this question, these commonly related to knitting’s perceived psychological benefits, such as relaxation and relief from stress, together with therapeutic and meditative qualities, which were related to its rhythmic and repetitive nature. Knitting was also seen as a means of being productive whilst engaging in passive activities, such as watching television or travelling, or during unproductive time, such as queuing or waiting for appointments. It provided hands-on physical tactile engagement, which offered a sense of accomplishment, a creative outlet and a connection to tradition. It also offered a means of giving to others and a vehicle for social activity.

Knitting frequency

The majority of respondents (72%) reported knitting more than three times per week. Analysis revealed a significant relationship between the frequency of knitting and respondents’ perceived mood and feelings; specifically calmness, happiness, sadness, anxiety and confidence.

**Table 2. The relationship between knitting frequency and feeling calm or happier after knitting\***

Knitting frequency	n	Mean for feeling calm after knitting	Mean for knitting and happiness
Every day.....	1313.....	2.48.....	2.28.....
3-5 times per week .....	1228.....	2.32.....	2.12.....
1-2 times per week.....	387.....	2.21.....	2.02.....
Once a fortnight .....	128.....	2.16.....	1.99.....
Once a month.....	91.....	2.03.....	1.77.....
Rarely or never.....	63.....	1.95.....	1.68.....

\*In these questions respondents were asked to rate whether knitting helped them feel calm and happier on a 5-point scale, ranging from 'definitely not' to 'definitely'. NB: this was re-coded for analysis as: 1 = not really, 2 = usually, 3 = definitely (due to problems with low frequencies in the original coding).

### *Calmness*

Frequent knitters, especially those who knitted more than three times per week, were more likely to report feeling calm after knitting. The difference between means (see Table 2) was significant using one-way ANOVA ( $p < 0.001$ ).

Respondents commonly reported that induced feelings of calm and relaxation were related to the rhythmical nature of the knitting process. The process or activity of knitting was considered to be important to 67% of respondents who rated it between 8 and 10 on a scale of 0 to 10, where 0 was 'not at all' and 10 'very'. For example, one respondent described 'the rhythm of the repetitive motion in simple projects' as 'hypnotic and calming' when she was feeling stressed. Another felt that it was 'relaxing and yet engaging at the same time'. Others described knitting as 'soothing', 'restful' or 'spiritual'. Respondents also felt that knitting had meditative and 'zen-like' qualities. Feeling calm and relaxed was associated with stress relief.

### *Stress relief*

Respondents were asked if knitting made them feel more stressed and the majority (79%) said that it definitely 'did not' or 'did not usually', with a further 18% indicating that it did 'sometimes'. Knitting was for the majority of respondents a 'stress reliever'; the process was, for example, described as a way to 'unwind' from stresses of work:

I can sit back and create something while letting the daily stresses melt away.

Relaxing or unwinding after work was especially important for people whose paid work involved information technology (IT) and computers:

... to disconnect from all the screens and beeps and blips in my life, and just focus on using something tactile with my hands.

Knitting also helped respondents who had anxiety disorders to cope with stressful situations:

I have extreme social anxiety and it gives me something to focus on if I have to be around people. It helps me relax so that my anxiety and panic don't overwhelm me.

For the few respondents who sometimes, usually or definitely found knitting stressful (19.5%), this appeared from their comments to relate to its complexity or to the frustrations of learning new knitting skills. For the small number of people ( $n = 36$ ) who said that they knitted for profit, stress was associated with the pressure of working to commission and 'meeting deadlines'.

Knitting was also described as 'therapy' or 'therapeutic' by some respondents ( $n = 54$ ) in that the rhythm and process could provide a 'mental break' for those who had stress or depression. As one respondent put it:

Knitting has transformed my life in a way I never could have imagined. It keeps me occupied and makes sure depressive thoughts and inertia don't have a chance to creep in and take hold and it's working far better than any previous method I've ever tried for this.

In summary, the findings indicate that the qualities inherent in the process of knitting can offer a means of coping with the stresses of daily life; it also impacted on mood.

### **Knitting and happiness**

Respondents were asked to indicate on a 7-point scale ranging from 'very sad' to 'very happy' what their mood was generally like before they started knitting: 43% described their mood as 'neutral', with a further 34% describing themselves as 'happy'. The remaining 23% rated themselves as 'a little' to 'very sad'. However, after knitting less than 1% said that they remained sad and 81.5% rated themselves as feeling 'a little' to 'very happy'. Furthermore, the results displayed in Table 2 indicate a positive association between more frequent knitting and respondents' perceptions of improved mood after knitting. Means are significantly different using one-way ANOVA ( $p < 0.001$ ).

Approximately a quarter of respondents chose to offer further explanations of how knitting impacted on their mood. Just over a half of this group said that their mood varied depending on circumstances or the time of day. The majority, however, indicated that whatever their mood was before knitting, it improved afterwards. For example:

I knit regardless of my mood and I can be either happy or sad going into it. It always makes me feel better ...

Others felt that knitting helped them to cope with mood rather than to change it. For the few respondents who described themselves as depressed, having very low mood could impact on their ability to engage in knitting:

I think the only time when I really don't feel like knitting is when I am very sad.

The extent to which mood improved after knitting was also associated by some with the complexity of the project and the difficulties encountered. Respondents were also asked if the colour and texture of the yarn affected their mood.

### *The impact of colour and texture*

On a 5-point scale ranging from 'definitely not' to 'definitely', 29% of respondents indicated that the colour of the yarn did



**Table 3. Frequency of knitting\***

	Frequency of knitting	n	Mean
Organise thoughts.....	3 times per week or more.....	2540.....	3.43.....
	Less than 3 times per week.....	656.....	3.17.....
Forget problems.....	3 times per week or more.....	2562.....	3.33.....
	Less than 3 times per week.....	666.....	3.16.....
Memory.....	3 times per week or more.....	2548.....	3.89.....
	Less than 3 times per week.....	659.....	3.37.....
Concentration.....	3 times per week or more.....	2531.....	3.87.....
	Less than 3 times per week.....	658.....	3.57.....

\*The frequency of knitting variable was re-coded as a binary variable (1 = 3 times a week or more, 2 = less often).

not usually affect their mood compared with less than 1% for texture. However, 24% of respondents felt that colour 'usually' or 'definitely' affected their mood and 46% felt that texture did. Respondents typically referred to the 'tactile pleasures in fibres' and 'touchable feelable result'. The majority of respondents also felt that knitting improved their thinking, memory and concentration.

### Cognitive ability

Just under half (47%) of respondents indicated that knitting 'usually' or 'definitely' helped them to think through problems, 37% said that it helped them to forget problems and 39% felt that it helped them to organise their thoughts. Furthermore, 55% felt that knitting 'usually' or 'definitely' helped their thinking to flow more easily. Over half of the respondents (58%) also thought that knitting was good for their memory and 61% said that it improved their concentration. Cross-tabulation indicated a strong relationship between these variables and knitting frequency. Application of a two-sample t-test showed that for each of the dependent variables, the perceived effect was significantly greater for more frequent knitters ( $p < 0.001$  in every case) (see Table 3).

The respondents' comments illustrated how knitting helped their thinking, problem solving and concentration. Knitting helped 'clear the mind' and the process of knitting was described as a diversion from negative thoughts. As one person put it: 'I can escape while I knit.' Others felt that it helped them think through problems:

Knitting helps me mull through problems, as a kinaesthetic learner I find it easier to work on things when my hands are working.

Respondents described the challenges of knitting, such as working out a complex pattern and exercising new knitting skills, as improving their problem-solving abilities. The need to assimilate and remember instructions and patterns was also considered to be good for improving short-term memory.

Respondents also commented on how knitting helped their concentration. Commonly, they felt that by keeping their hands busy they could focus and pay attention to other things more easily. One respondent described knitting as requiring 'just enough concentration to keep you occupied, but not enough to tax'. Others also commented on how knitting helped them to focus in lectures, during conversations, and while watching television or listening to music.

### Social aspects of knitting

Just over half (50.3%) of respondents said that they knitted in a knitting group. Of this group, 65% felt that knitting with others 'usually' or 'definitely' gave them confidence and 86% said that knitting with others gave them a feeling of belonging. In addition, 90% said that they had made several or more friends through knitting and 70% found it 'usually' or 'definitely' easier to talk to other knitters.

The social connections and interactions that came about through knitting emerged as an important aspect for many respondents. Knitting was described as 'a great conversation starter' and as 'something to connect with people over', which could then lead to conversations on other topics. Knitting was also described as a vehicle for socialising in both virtual (internet) and real time groups. One respondent described how it had helped her to manage otherwise difficult social situations:

... I love the structured nature of knitting classes and circles. It also gives me something in common with people during conversation. It's something I can do with my hands while interacting with people. It helps me manage my shyness.

Knitting with others was also perceived to have a positive impact on mood.

#### *The relationship between knitting with others and mood*

An analysis of the relationship between the social aspects of knitting and mood indicated that people who knitted in a group were more likely to feel 'calmer', 'happier', 'excited', 'useful' and 'better' about themselves than those who did not. Two-sample t-tests and Mann-Whitney both showed a significant difference between the group and non-group knitters on all of these variables ( $p < 0.001$ ). No significant differences were found, however, for those who rated themselves as 'sad', 'anxious' or 'stressed'. However, for people with depression, there was a significant association between membership of a knitting group and both 'feeling happier' ( $p = 0.015$ ) and 'better about themselves' ( $p = 0.044$ ). There was also a relationship between knitting in a group and learning new skills.

#### *The relationship between knitting with others and learning new skills*

Analysis revealed that those who knitted in a group, whether virtual or face to face, were more likely to feel that knitting had definitely helped them to learn new skills, both knitting skills (72%) and other skills (41%), when compared with respondents who did not knit in a group (two-sample t-tests and Mann-Whitney both showed significant differences, with  $p < 0.001$  in all cases). For example, one respondent described how:

From talking with other knitters I've learned new cooking, gardening, sewing and beading techniques.

Communicating with others online had also helped respondents to improve their IT skills:

I also got involved with internet forums and started my own knitting blog so it has helped me improve my IT skills.

Knitting had 'usually' or 'definitely' encouraged 57% of respondents to learn new skills. Respondents described a wide range of transferable practical, cognitive and social skills, together with strategies for coping with different situations.

### *Practical skills*

Respondents commonly reported that knitting had led them to learn other crafts, such as sewing, crochet, spinning, weaving and dyeing, together with the ability to design their own products. Others described learning a range of transferable practical skills, such as decorating and other do-it-yourself projects.

Building confidence, being more adventurous and feeling able to take risks and to try new things were described as resulting from learning new skills. Additionally, being able to make 'gifts for others', 'household objects' and 'clothes/accessories' was associated with being content and 'less materialistic', 'bringing creativity into daily life' and 'learning how to be more self sufficient'.

Some respondents (n = 68) also described gaining skills in teaching others. For example, one respondent had started a knitting club in her local school, teaching teenagers to knit. In addition to practical skills, respondents described cognitive skills and abilities gained through knitting.

### *Cognitive skills*

The cognitive skills and abilities that improved for respondents as a result of knitting included mathematics, planning and organising, and visual/spatial awareness.

Mathematical skills were reported as having improved on different levels depending on the complexity of their knitting; for example, from 'mental arithmetic' for 'calculating stitches and measurements' to altering 'the size and gauge of an existing pattern'. Mathematical skills together with improved abilities to 'plan ahead and organise' were also transferred to other areas such as 'budgeting' and, for example, 'thinking resourcefully about what I need to spend money on'. Budgeting was also connected to the need to buy yarn and other knitting supplies. Improved visual and spatial awareness was described in terms of an ability 'to think in a more three-dimensional way', 'conceptualise' a finished item and work out the 'spatial relationships' between the different components of, for example, a garment.

### *Social/communication skills*

In addition to the social aspects and the benefits of engaging in virtual and real knitting groups and communities, respondents said that knitting in groups or making contact with others had improved their communication skills, which in turn gave them confidence. One respondent said:

I often have problems with communication in group situations, knitting helps me speak and has really improved my ability to make friends.

Knitting was also felt to be important as a means of coping with stressful situations.

### *Coping skills*

Respondents reported that knitting helped them to cope with 'emotional control' and 'approach problems more calmly'. Others described how knitting had helped them to cope with stressful events, such as serious family or personal illness. For example, one respondent said:

I can accomplish something meaningful even when I'm in a lot of pain.

In fact, the step-by-step approach to knitting is, as one respondent described it, transferable to other aspects of life:

– a sweater or shawl is made one stitch at a time, and eventually you get a finished product. In life – when things are hard, you take it a few minutes at a time, and eventually you make it through.

In summary, the skills that respondents had learnt through knitting were transferable to other aspects of their lives on a practical and cognitive level. Additionally, knitting had provided many respondents with the skills for coping with otherwise difficult situations and events.

## Discussion

For the respondents to this survey, who are members of a virtual knitting community, knitting is a personally and socially valued, creative, skilled and rewarding occupation. The high response rate, achieved within a relatively short space of time, could be an indication of the passion that these knitters have for their craft and their recognition of its benefits. Although responses were received from a cross-section of different ages, the skew towards younger adults possibly resulted from the nature of both the survey and the host internet site, which captured frequent internet users with the technical ability to share and make use of specialist information online (Ó Dochartaigh 2002). It is also indicative of the resurgence of interest in hand crafts among younger women, referred to by Minahan and Wolfram Cox (2007). The predominance of female respondents is an indication of the gendered nature of knitting as a domestic craft, which also has associations with the feminist movement (Hosegood 2009).

Knitting is both a process and a product-oriented occupation. Blanche (2007) used the term 'process-oriented', where benefits are derived from occupational engagement (p22). In this study, respondents attributed a number of psychological benefits to the knitting process, coming from its rhythmic and repetitive nature, which induced feelings of calm and relaxation. This echoes the findings from other studies, especially those related to leisure or arts and crafts (Ball et al 2007, Riley 2008). For the majority of respondents in this study, knitting was perceived as a means of unwinding from the stresses of everyday life or as a coping strategy for those with anxiety problems, pain or depression.

Turney (2009) referred to the value of knitting during periods of stress when 'the combination of concentration and rhythm distances the self from the world outside' (p154). Knitting was also perceived by the majority of respondents as impacting positively on mood.

Feelings of happiness and improved mood were significantly associated with more frequent knitting. Knitting in a group also had a perceived impact on happiness. In contrast, knitting had little impact for the few respondents with very low mood. Although the reasons for this are unclear and require further investigation, Turney (2009) suggested that the contemplative space created through knitting alone, which allows for introspection, can be uncomfortable in some instances, whereas knitting with others can distract from negative thoughts. This might explain why people with low mood do not always find solitary knitting mood enhancing, and why those respondents who described themselves as depressed felt that knitting in a group improved their mood. This could be of importance to occupational therapists who, in conjunction with their clients, need to consider the most appropriate form of occupation, together with the mode and optimal time for therapeutic engagement. Such issues require further research. Interestingly, texture had more impact on respondents' mood than colour; this is commensurate with other work on textiles, where heightened tactile awareness among textile artists/craftspeople has been noted (Riley 2008).

Knitting was perceived by respondents to improve their thinking, concentration, problem-solving abilities and memory; again, these variables were significantly related to more frequent knitting. Knitting also helped respondents to concentrate on other tasks, such as listening to speech or music, and provided a productive use of time whilst engaging in other passive activities. Knitting appears to offer much more than a diversion from otherwise boring tasks; from respondents' comments, its rhythmic yet skilled process has the potential to induce flow (Csikszentmihalyi 1988), free up thinking and promote reflection. In common with Dickie's (2011) analysis of the therapeutic aspects of quilting, knitting offers variability in terms of challenge and skill. Knitting also provides an outlet for personal creativity and its products offered meaningful ways for respondents to give to others and become more self-sufficient. In addition, and in a similar way to other arts and crafts (Reynolds and Prior 2003, Riley 2011), knitting encouraged further skill acquisition, both in terms of other craft skills and transferable life skills.

Despite being an individual pursuit, the potential of knitting to promote social inclusion was strongly evident from the survey. Knitting provided a vehicle, through belonging to real time or virtual groups, for improving social contact and communication and for making friends. In common with quilting (Dickie 2011), knitting's social aspects enhance its therapeutic potential. Taken as a whole, the findings indicate that knitting has the potential to promote quality of life and personal and social wellbeing for people who engage in it as a meaningful occupation. The psychological and social benefits derived from knitting are an indication of its thera-

peutic potential; however, the specific benefits for people with different problems and conditions require further research.

## Critical evaluation

The use of an online questionnaire (administered in English) and the consequent self-selecting sample resulted in a bias towards younger age groups and English-speaking internet users, who were mainly from North America and the United Kingdom. Although other countries and cultures were represented, numbers were small and further research is needed to account fully for potential differences in perceptions across cultures and traditions. The use of an internet knitting site as host also meant that mostly keen and frequent knitters took part. This could be seen as an advantage in that committed knitters could more easily relate to knitting's potential psychological and social qualities, although further analysis is needed to establish any differences in perceptions between knitters with different levels of experience.

Despite the use of professional software to design the questionnaire and a pilot to improve validity, the construction of some questions led to difficulties in analysing relationships among variables. For example, the questions 'What is your medical condition?' and 'Where do you live?' led to descriptive answers that were difficult to disaggregate. Also the scales to establish frequencies, such as the frequency of knitting, required re-coding for analysis. Such issues have an impact on reliability.

## Conclusion

The findings from this international survey highlight the personal psychological and social benefits that can be derived from knitting and its consequent impact on wellbeing for committed knitters. By concentrating on one occupation rather than investigating a general occupational category, such as leisure, the findings can offer more specific evidence of the factors that might underpin its therapeutic use; in particular, that engaging in frequent knitting has the potential to induce feelings of calm and relaxation and to raise mood. It can also contribute to stress relief. Knitting products are an outlet for creativity and knitting can help individuals to engage on a social level: virtually, through the internet, and in real time through knitting with others.

### Key findings

- For committed knitters, there is a significant relationship between knitting frequency and perceptions of feeling calm and happier.
- Members of a virtual knitting community perceived knitting in a group as improving their social confidence and communication.

### What the study has added

This study adds to the growing evidence that engaging in creative, skilled, meaningful and rewarding occupation can contribute significantly to quality of life, and to personal and social wellbeing.

## Acknowledgement

Dr Ulrich von Hecker, School of Psychology, Cardiff University, for his advice and assistance with the survey design.

*Conflict of interest:* None declared.

## References

- Ball V, Corr S, Knight J, Lowis MJ (2007) An investigation into the leisure occupations of older adults. *British Journal of Occupational Therapy*, 70(9), 393-400.
- Bedding S, Sadlo G (2008) Retired people's experience of participation in art classes. *British Journal of Occupational Therapy*, 71(9), 371-78.
- Blanche EI (2007) The expression of creativity through occupation. *Journal of Occupational Science*, 14(1), 21-29.
- Boerema C, Russell M, Aguilar A (2010) Sewing in the lives of immigrant women. *Journal of Occupational Science*, 17(2), 78-84.
- Bristol Online Surveys (2012) *About BOS*. Available at: <http://www.survey.bris.ac.uk/support/about> Accessed 14.01.12.
- Csikszentmihalyi M (1988) The flow experience and its significance for human psychology. In: M Csikszentmihalyi, IS Csikszentmihalyi, eds. *Optimal experience: psychological studies of flow in consciousness*. Cambridge: Cambridge University Press, 15-35.
- Department of Health and Arts Council England (2007) *A prospectus for arts and health*. Available at: [http://www.artscouncil.org.uk/publication\\_archive-for-arts-and-health](http://www.artscouncil.org.uk/publication_archive-for-arts-and-health) Accessed 27.08.10.
- Dickie VA (2004) From drunkard's path to Kansas cyclones: discovering creativity inside the blocks. *Journal of Occupational Science*, 11(2), 51-57.
- Dickie VA (2011) Experiencing therapy through doing: making quilts. *Occupational Therapy Journal of Research*, 31(4), 209-15.
- Dillman DA (2007) *Mail and internet surveys: the tailored design method*. 2nd ed. Chichester: John Wiley.
- Fowler FJ (2002) *Survey research methods*. 3rd ed. Thousand Oaks, CA: Sage.
- Gaiser TJ, Schreiner AE (2009) *A guide to conducting online research*. London: Sage.
- Gillow J, Sentance B (1999) *World textiles: a visual guide to traditional techniques*. London: Thames and Hudson.
- Hacking S, Secker J, Kent L, Shenton J, Spandler H (2006) Mental health and arts participation: the state of the art in England. *Journal of the Royal Society for the Promotion of Health*, 126(3), 121-27.
- Håkansson C, Ahlborg G (2010) Perceptions of employment, domestic work and leisure as predictors of health among women and men. *Journal of Occupational Science*, 17(3), 150-57.
- Harris J (2004) Knitting. In: J Harris, ed. *5000 years of textiles*. London: British Museum Press, 46-48.
- Hocking C (2009) The challenge of occupation: describing the things that people do. *Journal of Occupational Science*, 16(3), 140-50.
- Hosegood B (2009) Whip your hobby into shape: knitting, feminism and construction of gender. *Textile: The Journal of Cloth and Culture*, 7(2), 148-63.
- Howell D, Pierce D (2000) Exploring the forgotten restorative dimension of occupation: quilting and quilt use. *Journal of Occupational Science*, 7(2), 68-72.
- Huppert FA (2009) Psychological well-being: evidence regarding its causes and consequences. *Applied Psychology*, 1(2), 137-64.
- Jakobsen K (2004) If work doesn't work: how to enable occupational justice. *Journal of Occupational Science*, 11(3), 125-34.
- Katz-Frieberg T (2010) 'Craftsmen in the factory of images', from *BoysCraft*. In: G Adamson, ed. *The craft reader*. New York: Berg, 596-605.
- Lawley S (2004) Kaffe Fasset. In: S Brown, M Kumar Mitchell, eds. *The beauty of craft, a resurgence anthology*. Totnes: Green Books, 168-71.
- Lloyd C, King R, McCarthy M, Scanlan M (2007) The association between leisure motivation and recovery: a pilot study. *Australian Occupational Therapy Journal*, 54(1), 33-41.
- Minahan S, Wolfram Cox J (2007) Stitch'nBitch: cyberfeminism, a third place and the new materiality. *Journal of Material Culture*, 12(5), 5-21.
- Ó Dochartaigh N (2002) *The internet research handbook: a practical guide for students and researchers in the social sciences*. London: Sage.
- Perruzza N, Kinsella EA (2010) Creative arts occupations in therapeutic practice: a review of the literature. *British Journal of Occupational Therapy*, 73(6), 261-68.
- Reynolds F (2006) Creative adventures and flow in art-making: a qualitative study of women living with cancer. *British Journal of Occupational Therapy*, 69(6), 255-62.
- Reynolds F (2009) Taking up arts and crafts in later life: a qualitative study of the experiential factors that encourage participation in creative activities. *British Journal of Occupational Therapy*, 72(9), 393-400.
- Reynolds F, Prior S (2003) 'Sticking jewels in your life': exploring women's strategies for negotiating an acceptable quality of life with multiple sclerosis. *Qualitative Health Research*, 13(9), 1225-51.
- Riley J (2008) Weaving an enhanced sense of self and a collective sense of self through creative textile-making. *Journal of Occupational Science*, 15(2), 63-73.
- Riley J (2011) Shaping textile-making: its occupational forms and domain. *Journal of Occupational Science*, 18(4), 322-38.
- Stanley M (2002) Jumpers that drive you quite insane: colour, structure and form in knitted objects. In: M Schoeser, C Boydell, eds. *Disentangling textiles, techniques for the study of designed objects*. London: Middlesex University Press, 23-32.
- Staricoff RL (2004) *Arts in health: a review of the medical literature*. Research report 36. Available at: [http://www.artscouncil.org.uk/publication\\_archive-for-arts-in-health-a-review-of-the-medical-literature/](http://www.artscouncil.org.uk/publication_archive-for-arts-in-health-a-review-of-the-medical-literature/) Accessed 27.08.10.
- Stitchlinks (2010) *Telling your story*. Available at: <http://www.stitchlinks.com/mystory.html> Accessed 01.04.10.
- Turney J (2009) *The culture of knitting*. Oxford: Berg.
- Tzanidaki D, Reynolds F (2011) Exploring the meanings of making traditional arts and crafts among older women in Crete, using interpretative phenomenological analysis. *British Journal of Occupational Therapy*, 74(8), 375-82.
- Wilcock AA (2006) *An occupational perspective of health*. 2nd ed. Thorofare, NJ: Slack.
- World Health Organization (2009) *Mental health: a state of well-being*. Available at: [http://www.who.int/features/factfiles/mental\\_health/en/](http://www.who.int/features/factfiles/mental_health/en/) Accessed 23.05.11.